

CLAIMS

1. A probe carrier having immobilized thereto a probe that is specifically bindable to a target
5 substance, the probe being immobilized to the carrier through the following substances:
a) a linker bound to the probe;
b) a first functional group bound to the linker; and
c) a second functional group bound to the first
10 functional group,

wherein a combination of the first functional group and the second functional group comprises an acidic functional group and a basic functional group.

15 2. The probe carrier according to claim 1, wherein the combination of the first functional group and the second functional group comprises an acidic functional group having a dissociation constant of 1.0×10^{-12} or more and a basic functional group
20 having a dissociation constant of 1.0×10^{-6} or more.

3. The probe carrier according to claim 1, wherein the probe comprises an oligonucleotide or a nucleic acid.

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4. The probe carrier according to claim 3, wherein the oligonucleotide or the nucleic acid has

the linker at a 3'-terminal or a 5'-terminal thereof.

5. The probe carrier according to claim 1,
wherein the linker comprises a methylene chain or a
5 polyether chain.

6. The probe carrier according to claim 1,
wherein the acidic functional group is a mercapto
group and the basic functional group is an amino
10 group.

7. The probe carrier according to claim 1,
wherein the basic functional group is one selected
from the group consisting of a primary amino group, a
15 secondary amino group, and a mixture thereof.

8. The probe carrier according to claim 1,
wherein the probe has a second functional group
introduced by treatment of the solid phase carrier.
20 with a silane coupling agent.

9. The probe carrier according to claim 8,
wherein the solid phase carrier is one selected from
the group consisting of glass, quartz, silica, and a
25 mixture thereof.

10. The probe carrier according to claim 1,

wherein the combination of the first functional group and the second functional group is a combination that causes shift of mutual chemical shifts of signals in the NMR spectrum by binding each other.

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11. A detection method comprising the steps of:
imparting an analyte containing a substance to be detected to a probe carrier according to claim 1;
and

10 detecting the substance to be detected in the analyte bound to the probe carrier.

12. A detection apparatus using a detection method according to claim 11.

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13. An apparatus for producing a probe carrier according to claim 1.

14. A method of immobilizing a probe that is
20 specifically bindable to a target substance to a solid phase carrier, comprising the steps of:

providing a probe having a linker containing a first functional group;

providing an immobilization substrate having a
25 second functional group;

imparting the probe to the immobilization substrate; and

binding the first functional group and the second functional group to each other,

wherein a combination of the first functional group and the second functional group comprises an
5 acidic functional group and a basic functional group.

15 15. The method of immobilizing a probe according to claim 14, wherein the combination of the first functional group and the second functional
10 group comprises an acidic functional group having a dissociation constant of 1.0×10^{-12} or more and a basic functional group having a dissociation constant of 1.0×10^{-6} or more.

15 16. The method of immobilizing a probe according to claim 14, wherein the probe comprises an oligonucleotide or a nucleic acid.

20 17. The method of immobilizing a probe according to claim 16, wherein the oligonucleotide or the nucleic acid has the linker at a 3'-terminal or a 5'-terminal thereof.

25 18. The method of immobilizing a probe according to claim 14, wherein the linker comprises a methylene chain or a polyether chain.

19. The method of immobilizing a probe according to claim 14, wherein the acidic functional group is a mercapto group and the basic functional group is an amino group.

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20. The method of immobilizing a probe according to claim 14, wherein the basic functional group is one selected from the group consisting of a primary amino group, a secondary amino group, and a mixture thereof.

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21. The method of immobilizing a probe according to claim 14, wherein the probe has a second functional group introduced by treatment of the solid phase carrier with a silane coupling agent.

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22. The method of immobilizing a probe according to claim 21, wherein the solid phase carrier comprises one selected from the group consisting of glass, quartz, silica, and a mixture thereof.

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